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## (54) Laboratory furniture

(57) Laboratory furniture, for example, a work bench includes a plurality of linked bench modules 14, 16 or 32, 34. Each bench comprises a substantially planar polygonal work surface 20 and connected thereto a bridging unit 24. One free end of the bridging unit 24 is adapted for attachment to an edge of an adjacently disposed module. Each module 14, 16, 32, 34 also includes a support structure (not shown) which serves to carry and support the bridging unit 24 and the work surface 20. The support structure includes connections for services such as gas, water, electricity etc and outlets, for example, gas taps 18, water taps 28, drain 30 etc are provided in or on the work surface and/or the bridging unit. The modules can be combined in a variety of arrangements with each work surface being provided with a number of service points.

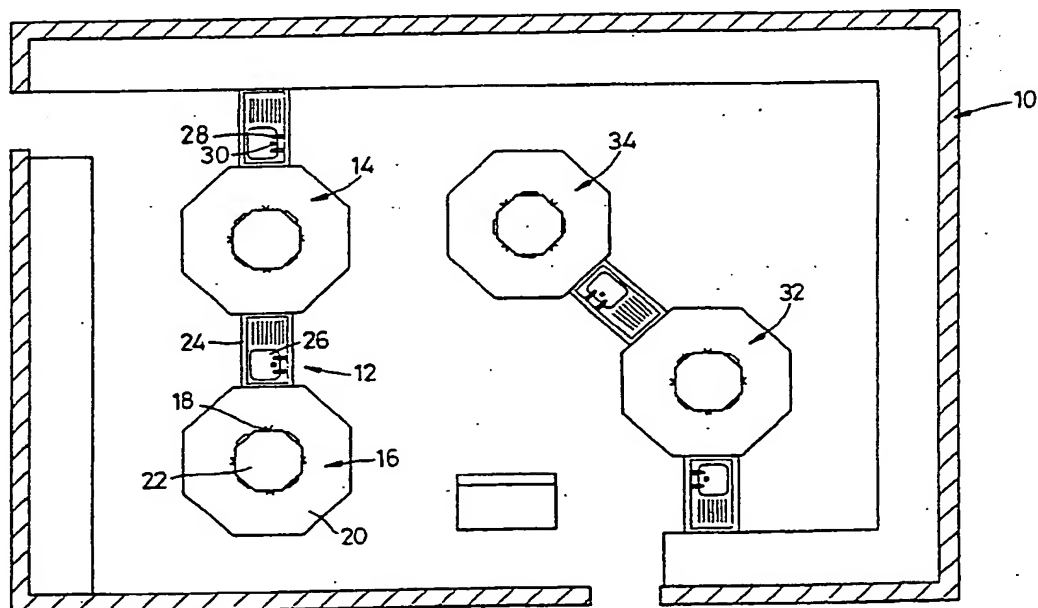


Fig. 1

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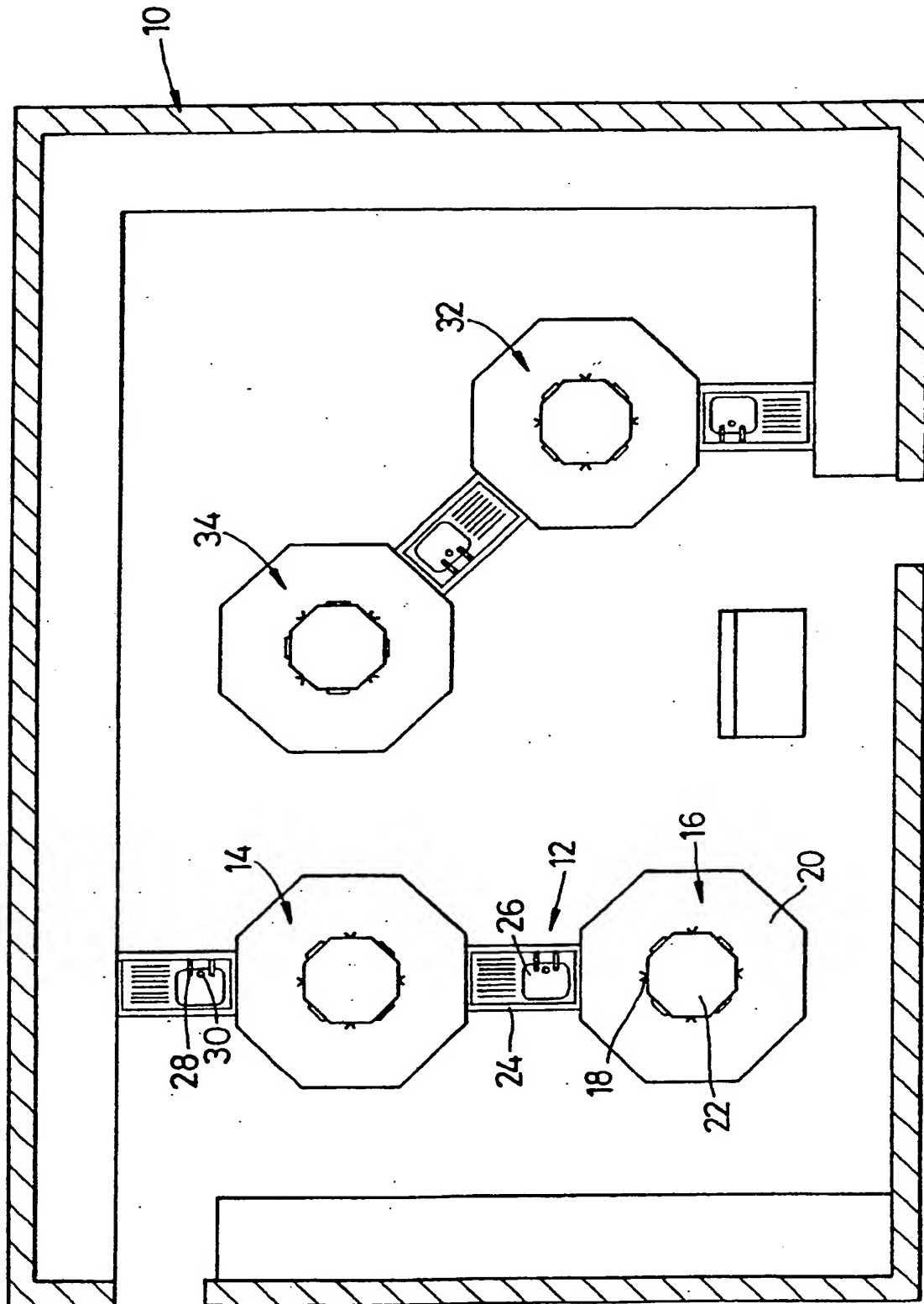


Fig. 1

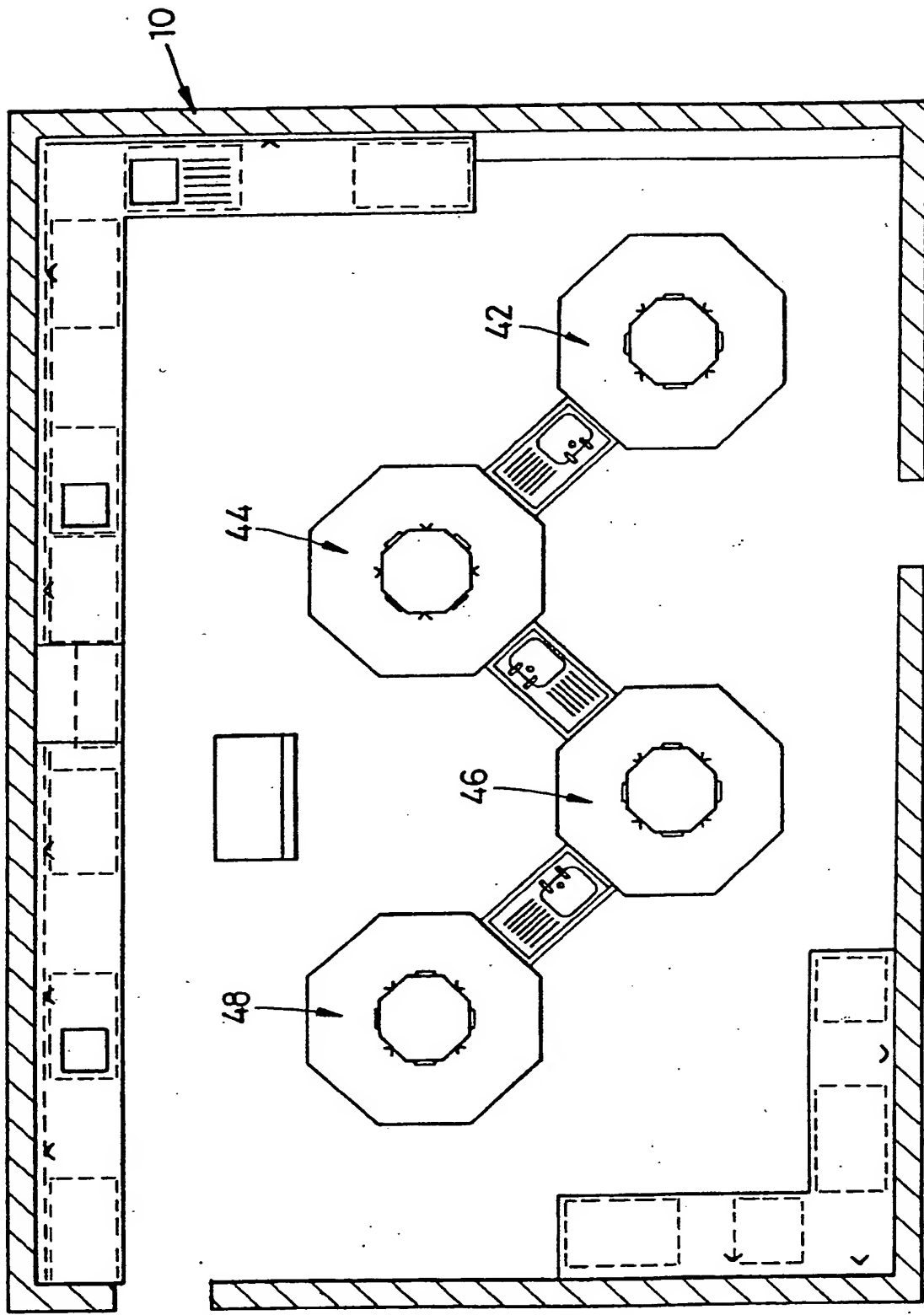


Fig. 2

LABORATORY FURNITURE

This invention relates to laboratory furniture in particular such furniture providing a work surface to permit laboratory users to perform experiments and other similar actions.

A laboratory is usually provided with a plurality of work stations or work benches to provide working surfaces. Where the laboratory is in an educational environment, for example a school or college, these benches are normally arranged in a number of rows to facilitate demonstrations or teaching. This arrangement presents a generally unattractive appearance and does not provide an interesting working environment for those people using the laboratory.

One problem which limits the ways in which benches may be arranged is the requirement for each bench or its work surface to be provided with certain services, for example gas, electricity, water and/or drainage. Each of these services must be plumbed or otherwise installed into the bench during its construction which means that the arrangement as a whole is generally inflexible and it is not easy to rearrange the room if required or to use the room for any other purpose other than as a laboratory.

British Patent No. 2104375 overcomes this problem by providing free-standing units connected at their upper part by way of overhead multi-service connectors to adjacent units. Thus, water, gas, electricity and drainage can all flow from one bench and into the next without being part of the fabric i.e. the floor or walls etc of the room in question. This arrangement does, however, have disadvantages, in particular, the requirement for the drainage or waste water to be pumped from a lower level, in the work surface, up into the overhead connector units. Furthermore, the amount of space occupied by each unit proposed in the patent does not permit its use by a maximum possible number of students.

It is an object of the present invention to provide laboratory furniture of a modular form which can be combined in a variety of arrangements and in which each work surface is provided with a number of service points.

With this object in view the present invention provides laboratory in a first aspect furniture in the form of a work bench including a plurality of linked bench modules, each module including a substantially planar polygonal work surface and an attached bridging unit one free end of said bridging unit being adapted

for attachment to an edge of an adjacently disposed polygonal surface, each module also including a support structure linking the bridging unit with the polygonal work surface, the support structure including connections for services and operative to enable said services to be supplied to outlets provided on at least the polygonal surface and also for supplying said services to other adjacently connected work modules.

It will be understood that a work bench constructed of a plurality of such modules provides an essentially free standing structure which is connected to wall mounted service conduits at one end of the bench. Thus, the invention provides a work bench which can be installed into existing rooms without requiring extensive re-routing of underfloor conduits. Furthermore the geometric arrangement of the bench itself may be altered without affecting any permanent service conduits. In this way a flexible and responsive working environment is provided.

Advantageously the polygonal work surfaces are octagonal in shape providing eight equally sized edges against which to abut adjacent modules. The bridging units are preferably rectangular in shape and sized so as to co-operate with an adjacently placed module.

It will be appreciated that with an octagonal shaped work surface eight edges are presented for abutment of adjacent modules. Thus, a plurality of modules may be arranged in a large number of configurations with up to four modules branching from one central module.

Preferably a sink or wash basin and associated drainage system is included in the bridging unit with the drainage system connecting to a common return arrangement provided in the support structure for the bridging unit and the work surface.

A further aspect of the invention provides a module of laboratory furniture comprising a polygonal substantially planar work surface carried on a support structure, which is also operative to support a bridging unit disposed so as to abut one edge of the polygonal work surface, the support structure including connections for services selected from the group comprising gas, water, electricity and drains, said services being provided with respective outlets or inlets in at least the work surface, the service connections also being provided with free ends suitable for connection to a supply source.

The invention further provides a laboratory having at least one work bench including a plurality of

interconnected modules, each module having a substantially planar polygonal work surface connected to a bridging unit adapted for engagement with an adjacent module, both the work surface and the bridging unit being carried on a support structure including connections for services, at least the work surface being provided with an outlet for said services and the support structure further including means for passing the services onto adjacently located and connected modules.

The invention will be described further by way of example with reference to the accompanying drawings in which:

Fig. 1 is a plan view of a laboratory equipped with a work bench according to an aspect of the invention; and

Fig. 2 is a plan view generally similar to Fig. 1 illustrating an alternative arrangement.

In Fig. 1 a laboratory 10 is equipped with a first work bench 12 formed from two identical modules 14, 16, according to one aspect of the invention. Each of the modules 14, 16, is identical in construction and includes a substantially planar polygonal, work surface



20 which is octagonal in the preferred embodiment.

Arranged centrally of the work surface 20 is a raised plinth 22 also octagonal in shape which provides service outlets 18 for electricity and gas supply for use by a user of the laboratory for the performance of experiments etc. Each module also includes a substantially rectangular bridging unit 24 arranged disposed against one edge of the work surface 20. The bridging unit 24 includes a sink or wash basin 26 provided with a water supply in the form of a tap or taps 28 and a drainage outlet 30 in the form of a plug hole.

The bridging unit 24 and the work surface 20 are carried on a support structure in the form of a plinth (not shown). This plinth supports the work surface and bridging units over the floor of the laboratory at a convenient height for work purposes. The plinth also includes within its construction a plurality of connections for services to be supplied to the bridging unit and the work surface. In the preferred embodiment these services comprise gas, electricity, water and drainage outlets for connection to the raised central plinth 22 on the work surface and to the wash basin 26 in the bridging unit 24.

One significant advantage of an arrangement according to this aspect of the invention is that a plurality of modules may be arranged in any desired configuration in accordance with available space in the laboratory. In the example illustrated, two modules 14, 16, are arranged in a straight line configuration extending from one wall of the laboratory 10. This arrangement provides a large number of free edge surfaces for each of the respective work surfaces of the modules 14, 16, at which a laboratory user might be seated. In this way the maximum use may be made of available space.

Module 14 is connected to a wall of the laboratory 10 such that its service connections may be connected to appropriate or convenient sources of gas, electricity, water etc. and so that the drainage connection may be linked to the drains for the laboratory building as a whole.

An alternative arrangement is also shown in which two identical modules 32, 34 are arranged to form a work bench in which one module 34 which is angled with respect to that module 32 which is attached to a laboratory wall. Alternatively it is also possible to provide a bench formed of a single module 32 by omitting, for example, the second module 34. Such a

single module may be attached to the wall as shown to provide service supply points.

It will be appreciated that other configurations are possible using modules according to the invention, for example, two modules could be joined at right angles to each other.

Furthermore, more than one module may be connected to a single module in this way forming a branched or even star-like chain in which, for example four modules are arranged at mutual right angles or connected to a central module. Other arrangements are also possible.

In Fig. 2 an alternative arrangement is illustrated comprising three modules 42, 42, 46, each comprising a respective polygonal work surface and bridging unit. Additionally the bench thus formed includes a further polygonal work surface 48 which is attached to a bridging unit's free end thus forming a free standing work bench of four polygonal surfaces and three bridging units. It will be understood that in this configuration the services to be supplied to the work surfaces can be provided underneath the laboratory flooring, for example, in a trench in the floor. Such a trench may be linked to service conduits in the

laboratory walls or direct to the service supply source(s). Alternatively a low level bridging unit may be provided to link the bench to the service conduits.

A particular advantage of a work bench constructed according to an aspect of the invention is its flexibility. As the work bench (or benches) is an essentially free standing structure, which is only secured at one free end to a wall, the configuration of the bench may be altered without extensive re-routing of associated service conduits. Further such work benches may be easily incorporated into an existing laboratory without requiring structural alterations to provide service connections.

The invention is not limited to the foregoing details or to the precise configuration of the embodiment shown in the drawings and variations may be made thereto. For example, the polygonal work surface need not be octagonal in shape but may be any other convenient shape, for example square, hexagonal, pentagonal etc. The exact services supplied to a module need not be as specified in the preferred embodiment and may in fact comprise a selection from the group comprising gas, electricity, water and drainage services as required according to the laboratory's use and anticipated needs. Furthermore the wash basin or sink

may be accommodated in the work surface and need not be present in the bridging unit which is provided so as to space apart adjacent work surfaces such that users may have sufficient room to work at the surfaces without interfering with one another. Gas or electricity supplies may also be provided in the bridging unit if needed. Other variations may also be possible.

CLAIMS

1. A work bench including a plurality of linked modules, each module including a substantially planar polygonal work surface and an attached bridging unit one free end of said bridging unit being adapted for attachment to an edge of an adjacently disposed polygonal surface, each module also including a support structure linking the bridging unit with the polygonal work surface, the support structure including connections for services and operative to enable said services to be supplied to outlets provided on at least the polygonal surface and also for supplying said services to other adjacently connected work modules.

2. A work bench as claimed in claim 1 in which the polygonal work surfaces are octagonal in shape providing eight equally sized edges against which to abut adjacent modules.

3. A work bench as claimed in claims 1 or 2 in which the bridging units are rectangular in shape and sized so as to co-operate with an adjacently placed module.

4. A work bench as claimed in claims 1, 2 or 3 in which a sink or wash basin and associated drainage system is included in the bridging unit with the drainage system

connecting to a common return arrangement provided in the support structure for the bridging unit and the work surface.

5. A module of laboratory furniture comprising a polygonal substantially planar work surface carried on a support structure, which is also operative to support a bridging unit disposed so as to abut one edge of the polygonal work surface, the support structure including connections for services selected from the group comprising gas, water, electricity and drains, said services being provided with respective outlets or inlets in at least the work surface, the service connections also being provided with free ends suitable for connection to a supply source.

6. A laboratory having at least one work bench including a plurality of interconnected modules, each module having a substantially planar polygonal work surface connected to a bridging unit adapted for engagement with an adjacent module, both the work surface and the bridging unit being carried on a support structure including connections for services, at least the work surface being provided with an outlet for said services and the support structure further including means for passing the services onto adjacently located and connected modules.

7. A work bench substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

8. A module of laboraroty furniture substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.